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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,763	09/07/2000	Lin Wu	19000.0045/P045	1514
24998	7590	11/05/2003	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			NGUYEN, HAI L	
2101 L STREET NW			ART UNIT	
WASHINGTON, DC 20037-1526			PAPER NUMBER	
			2816	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/656,763

Applicant(s)

WU ET AL.

Examiner

Hai L. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-30 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Response to Amendment*

1. The amendment received on 08/07/03 has been reviewed and considered with the following results:

As to the objections to claims 2-15, Applicant's amendments have overcome the objections, as such; the objections to the claims have been withdrawn.

The prior art rejections to claims 1-3 made in the previous Office Action mailed on 11/07/01 are now withdrawn in view of Applicant's amendments. Applicant's amendments have been considered but are moot in view of a new action on the merits appears below.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Baba et al. (US 6,137,336; previously cited).

Baba et al. discloses in Figs.3-7 a signaling device and a method of use thereof, comprising a signal generator generating a plurality of output signals ( $\Phi 1$ - $\Phi N$ ) at a plurality of respective time intervals; and a plurality of time interval control units (1) regulating the respective time intervals of the plurality of output signals, wherein the plurality of time interval control units individually control the respective time intervals between the plurality of output

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signals so as to produce substantially uniform time spacing between each of the plurality of output signals, the plurality of time interval control units are a first plurality of delay cells (201-3 – 201-N) used to delay respective ones of the plurality of output signals based on a plurality of individual control signals (12-3 – 12-N) respectively received by the first plurality of delay cells.

***Claim Rejections - 35 USC § 103***

4. Claims 2, 3, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al.

With regard to claims 2, the above discussed the signaling device of Baba et al. meets all of the claimed limitations except for a set of output buffers (26a-26d in instant Fig.4). However, this would have been obvious to one of ordinary skill in the art who knows that it is common in the art output buffers for buffering the output signals. Therefore, it would have been obvious to one of ordinary skill in the art to implement the output buffers with the prior art (Fig.3-7 of Baba et al.) in order to eliminate unnecessary loading from the subsequent circuits on the signaling device.

With regard to claim 3, the signal generator further comprises a second plurality of delay cells (201-1, 201-2) respectively generating the plurality of output signals.

With regard to claim 8, the first plurality of delay cells (201-3 – 201-N) inherently are in a delay line used in a delay locked loop based system multi-phase clock generator system.

*Allowable Subject Matter*

5. Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 9-30 are allowed.

The prior art of record does not disclose or suggest a signaling device (as shown in Figs.4 and 6), as recited in claim 5; and specifically the limitation directed to the plurality of time interval control units are a second plurality of delay cells (24a-24d, 25a-25d) used to delay respective ones of the plurality of output signals based on a plurality of individual control signals (Vctrl1-Vctrl8) respectively received by the second plurality of delay cells.

The prior art of record does not disclose or suggest a signaling device, as recited in claim 7, and specifically the limitation directed to the first plurality of delay cells (10 in instant Fig.3) are in a ring oscillator used in a phase locked loop (PLL)-based multi-phase clock generator system.

The prior art of record does not disclose or suggest a signaling device (as shown in Fig.3), as recited in claim 9, comprising a first set of delay cells arranged in series (10), wherein each of the first set of delay cells produces a delayed output signal; and specifically the limitation directed to a second set of delay cells (14a-15d) respectively coupled to ones of the first set of delay cells; wherein each of the second set of delay cells receives a unique control signal (Vctrl1-Vctrl8) controlling the timing of the channel output signal ( $\Phi$ 1- $\Phi$ 8) output by each of the second set of delay cells.

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The prior art of record does not disclose or suggest a signaling device (as shown in Figs.4 and 6) and a method of use thereof, as recited in claims 16, 22, and 25, comprising: a phase detector (44); a charge pump (42); a loop filter (40); first plurality of delay cells (22a-22d); plurality of output buffers (26a-26d, 27a-27d); a calibration loop (60a-66a); and specifically the limitation directed to a second plurality of delay cells (24a-24d, 25a-25d), each coupled between one of said first plurality of delay cells and a paired one of said plurality of output buffers, wherein each of said plurality of delay cells receives an individual delay control signal to control delay of the cell in providing an output signal to its associated output buffer.

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 703-306-9178 and Right Fax number is 703-746-3951. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

HLN  
October 22, 2003

**TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800**